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**PATENT COOPERATION TREATY (PCT)
TRAITÉ DE COOPÉRATION EN MATIÈRE DE BREVETS (PCT)**

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A ÉTÉ DÉPOSÉE, AINSI QUE DE TOUTES CORRECTIONS Y RELATIVES**

International Application No. }
Demande internationale n° } **PCT/IB01/01047**

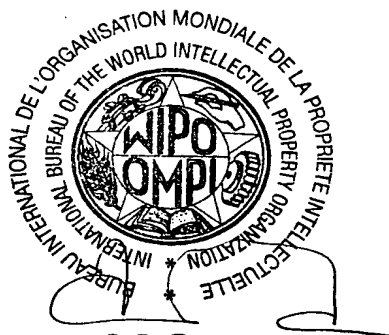
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Geneva/Genève,

**14 November 2003
(14.11.03)**

**International Bureau of the
World Intellectual Property Organization (WIPO)**

**Bureau International de l'Organisation Mondiale
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J.-L. Baron

**Head, PCT Receiving Office Section
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5521-PCT

PCT REQUEST

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0	For receiving Office use only	
0-1	International Application No.	PCT / IB 0 1 / 0 10 4 7
0-2	International Filing Date	14 JUNE 2001 (14.06.01)
0-3	Name of receiving Office and "PCT International Application"	INTERNATIONAL BUREAU OF WIPO PCT International Application
0-4	Form - PCT/RO/101 PCT Request	
0-4-1	Prepared using	PCT-EASY Version 2.91 (updated 01.01.2001)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	International Bureau of the World Intellectual Property Organization (RO/IB)
0-7	Applicant's or agent's file reference	5521-PCT
I	Title of invention	STABLE TRANSPARENT PERFUMING EMULSION
II	Applicant	
II-1	This person is:	applicant only
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III-1-7	State of residence	FR

PCT REQUEST

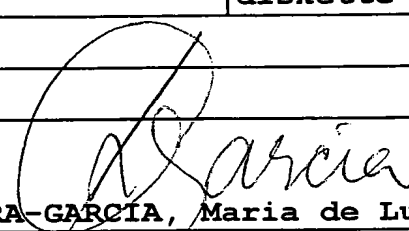
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IV-1	Agent or comm n representative; or address for corresp ndence The person identified below is hereby/has be n appointed to act on behalf of the applicant(s) befor the competent International Authorities as:	agent	
IV-1-1	Name (LAST, First)	SALVATERRA-GARCIA, Maria de Lurdes	
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IV-1-4	Facsimile No.	+41 22 780 33 38	
V	Designation of States		
V-1	Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	EP: AT BE CH&LI CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR and any other State which is a Contracting State of the European Patent Convention and of the PCT	
V-2	National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	BR CA CN IN JP MX US	
V-5	Precautionary Designation Statement In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit.		
V-6	Exclusion(s) from precautionary designations	NONE	
VI	Priority claim	NONE	
VII-1	International Searching Authority Chosen	European Patent Office (EPO) (ISA/EP)	
VIII	Check list	number of sheets	electronic file(s) attached
VIII-1	Request	3	-
VIII-2	Description	14	-
VIII-3	Claims	2	-
VIII-4	Abstract	1	EZABST00.TXT
VIII-5	Drawings	0	-
VIII-7	TOTAL	20	

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	Accompanying items	paper document(s) attached	electronic file(s) attached
VIII-8	Fee calculation sheet	✓	-
VIII-9	Separate signed power of attorney	✓	-
VIII-16	PCT-EASY diskette	-	diskette
VIII-18	Figure of the drawings which should accompany the abstract		
VIII-19	Language of filing of the international application	English	
IX-1	Signature of applicant or agent		
IX-1-1	Name (LAST, First)	SALVATERRA-GARCIA, Maria de Lurdes	

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10-1	Date of actual receipt of the purported international application	14 JUNE 2001	(14.06.01)
10-2	Drawings:		
10-2-1	Received		
10-2-2	Not received		
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application		
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)		
10-5	International Searching Authority	ISA/EP	
10-6	Transmittal of search copy delayed until search fee is paid	✓	

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11-1	Date of receipt of the record copy by the International Bureau	
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PCT (ANNEX - FEE CALCULATION SHEET)

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(This sheet is not part of and does not count as a sheet of the international application)

0	For receiving Office use only			
0-1	International Application No.	PCT / IB 0 1 / 0 1 0 4 7		
0-2	Date stamp of the receiving Office	14 JUNE 2001		
0-4	Form - PCT/RO/101 (Annex)			
0-4-1	PCT Fee Calculation Sheet Prepared using	PCT-EASY Version 2.91 (updated 01.01.2001)		
0-9	Applicant's or agent's file reference	5521-PCT		
2	Applicant	FIRMENICH SA, et al.		
12	Calculation of prescribed fees	fee amount/multiplier	total amounts (CHF)	
12-1	Transmittal fee T	⇒	0	
12-2	Search fee S	⇒	0	
12-3	International fee			
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	(first 30 sheets) b1	0		
12-4	Remaining sheets	0		
12-5	Additional amount (X)	0		
12-6	Total additional amount b2	0		
12-7	b1 + b2 = B	0		
12-8	Designation fees			
	Number of designations contained in international application	8		
12-9	Number of designation fees payable (maximum 6)	6		
12-10	Amount of designation fee (X)	0		
12-11	Total designation fees D	0		
12-12	PCT-EASY fee reduction R	0		
12-13	Total International fee (B+D-R) I	⇒	0	
12-17	TOTAL FEES PAYABLE (T+S+I+P)	⇒	0	
12-19	Mode of payment			

VALIDATION LOG AND REMARKS

PCT (ANNEX - FEE CALCULATION SHEET)

5521-PCT

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13-2-2	Validation messages States	<p>Green?</p> <p>More designations could be made. The following States have not been designated: AP:(GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW); EA:(AM, AZ, BY, KG, KZ, MD, RU, TJ, TM); OA:(BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG); AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BY, BZ, CH, LI, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW. Please verify.</p>
13-2-3	Validation messages Names	<p>Green?</p> <p>Agent 1.: Where several first/given names are indicated, they should preferably be separated by a comma. Please verify.</p>
13-2-4	Validation messages Priority	<p>Green?</p> <p>No priority of an earlier application has been claimed. Please verify</p>
13-2-6	Validation messages Contents	<p>Green?</p> <p>The international application contains no drawings. Please verify.</p>
13-2-7	Validation messages Fees	<p>Yellow</p> <p>The Fees page has not yet been completed.</p>
		<p>Yellow</p> <p>Fee amount(s) should not equal zero.</p>
13-2-8	Validation messages Payment	<p>Yellow</p> <p>The Payment page has not been completed.</p>

Stable transparent perfuming emulsion

Technical Field

5

The present invention relates to the field of perfumery. It concerns more particularly an alcohol-free perfuming composition in the form of a fluid, transparent water-in-oil or oil-in-water emulsion. The emulsion of the invention is characterised by an outstanding stability, the densities of the respective oily and aqueous phases being particularly close to one another.

10

Background of the Invention

15

Several criteria must be met in a well-formulated emulsion. Two of the most readily apparent requirements are that the emulsion possesses adequate physical and chemical stability.

20

First of all, chemical stability of the various components of the emulsion should receive a particular attention in perfumery, since the main materials used in perfuming compositions, namely perfuming ingredients, are well-known to be particularly difficult to stabilise in formulations such as emulsions (Cosmetics and Toiletries® Magazine, Vol. 109, pages 71-75, 1994). The stabilisation of formulations comprising high fragrance levels such as those concerned by the present invention constitutes therefore a specific and challenging problem, notably different from that of the stabilisation of a cosmetic emulsion, which comprises other kinds of components, the nature of which is generally dependent on the type of the final cosmetic product (typical active ingredients include natural or synthetic oils, hydrocarbons, halogenated carbons, esters of mineral acids, silicones). Furthermore, such cosmetic compositions contain very low amounts of perfuming ingredients.

25

30

On the other hand, an essential requirement sought in the formulation of an emulsion of any kind is the physical stability, without which the emulsion will soon revert back to separate bulk phases. One typical phenomenon associated with physical instability is constituted by the upward and downward movement of dispersed droplets relative to the continuous phase, termed creaming or sedimentation respectively. The factors that

influence the rate of sedimentation or creaming are the diameter of the suspended droplets, the viscosity of the suspending medium and the difference in densities between the dispersed phase and the dispersion medium.

The prior art discloses a first means to avoid this destabilisation phenomenon, consisting in reducing the particle size of the dispersed system, which contributes greatly toward overcoming or minimising creaming.

Therefore, perfuming compositions in the form of microemulsions are known from the prior art. Microemulsions are liquid dispersions of water and oil that are made homogeneous, transparent and stable by the addition of relatively large amounts of a surfactant and a co-surfactant. While emulsions are unstable, microemulsions are stable and, therefore, they are formed spontaneously when oil, water, surfactants and co-surfactants are mixed together. Conversely, emulsions require input of considerable mechanical energy for their preparation. Furthermore, microemulsion droplets have a narrow droplet size distribution with a mean diameter range of approximately 5-50 nm. Consequently this type of formulation scatters little light and is therefore transparent or at least translucent, while emulsions have very broad droplet size distributions and, as the emulsion droplets are comparable in size or larger than the wavelength of visible light, they scatter it more or less strongly depending on the difference in refractive index between oil and water. Thus most emulsions are opaque. It appears therefore that emulsions and microemulsions constitute two distinct dispersed systems, of different nature for the reasons here-above mentioned.

Now, for the purpose of the present invention, it is not desirable to incorporate an important amount of surfactant relative to the amount of perfuming ingredients, as this limits considerably the amount of fragrance that can be incorporated in the mixture. Therefore, a microemulsion does not constitute a suitable dispersed system for the present invention, which has to be in the form of an emulsion.

Another known transparent dispersed system of this type is the nanoemulsion characterised by an average size of the oily phase droplets below ca. 30-75 nm. The droplets are small enough to make the emulsion translucent or partially transparent. Although these nanoemulsions present the advantage of needing lesser amount of surfactants than the microemulsions, they present nevertheless the disadvantage that their process of preparation is often difficult and delicate, and thus costly.

The other manner disclosed in the prior art to stabilise a conventional emulsion is the addition of a polymer to the dispersed phase. However, this solution presents the

drawback of thickening said phase, thus increasing the viscosity of the emulsion such that it is no longer easily sprayable.

WO 00/33804, the contents of which is hereby included by reference, which describes a perfuming composition in the form of a transparent emulsion, already matches most of the criteria required for such an emulsion (transparency, fluidity). However, the emulsion there-described has now been improved in terms of physical stability, thanks to a novel solution to the physical stability problem here-above described.

In fact, the invention now provides a transparent, fluid, water-in-oil or oil-in-water emulsion characterised by the fact that the densities of the respective continuous and dispersed phases have almost matching values. This solution to the well-known problem of physical instability, and more particularly of creaming and sedimentation, specifically adapted to a dispersed system of the emulsion type, has been achieved thanks to the presence of a specific additive in the oily phase of the emulsion, namely a volatile fluorinated oil having a density higher than 1.

This class of compounds has already been used in some kinds of emulsions. In particular, EP 1064929 discloses the use of such a volatile fluorinated oil in a cosmetic composition for attenuating skin deficiencies and for giving a matt skin appearance. The cosmetic composition there-disclosed is not only totally distinct, from a formulation point of view, from a perfuming composition, but also the fluorinated oil is used in this prior art for a technical effect consisting in modifying the skin appearance, thus an aim distinct from that achieved by the present invention, i.e. the stabilisation of an emulsion.

EP 1064989 also discloses a cosmetic emulsion comprising a volatile fluorinated oil. Once again, the latter is described as being useful for its topical properties in such cosmetic applications, providing compositions of easy application, as well as fresh and soft products. Moreover, this document specifies that the fluorinated oil is very difficult to stabilise and may provoke an instability phenomenon such as foaming, demixing and changes in viscosity, and that it has thus to be used in combination with a specific surfactant, able to stabilise the emulsion. According to the teaching of this document, a volatile fluorinated oil is thus very difficult to stabilise.

It was therefore all the more surprising that we have now discovered, in a totally unexpected manner considering the teaching of the prior art, that a perfuming composition, in the form of an emulsion, could be advantageously stabilised by minimising the difference existing between the densities of the respective continuous and dispersed phases and that such an effect could be achieved by adding to the oily phase of the

emulsion a volatile fluorinated oil having a density higher than one, without any need of combining said ingredient with a specific surfactant such as disclosed in EP 1064989.

Together with the transparency, fluidity and stability requirements, the composition of the invention is also alcohol-free, which is an advantage henceforth sought
5 in such formulations.

Description of the Invention

10 It is thus an object of the present invention to provide an alcohol free perfuming composition in the form of a transparent water-in-oil or oil-in-water emulsion with an outstanding stability, characterised by the fact that the difference between the density of the oily phase and that of the aqueous phase is less than or equal to 0.005, preferably less than or equal to 0.003.

15 The emulsion of the invention is advantageously particularly resistant to phenomena such as creaming and sedimentation and constitutes a novel, effective solution to the instability problems known in the prior art compositions.

Therefore, according to the invention, it has been established that a substance can be added to a perfuming composition which is an emulsion and provide the technical
20 effect of bringing closer the densities of the respective phases of this emulsion. A volatile fluorinated oil having a density higher than 1 constitutes such a substance. Another object of the invention is thus provided by a perfuming composition in the form of an emulsion, wherein the oily phase comprises a certain amount of a volatile fluorinated oil having a density higher than 1. And furthermore, the invention also concerns the use of said
25 ingredient as a stabilisation agent in an emulsion.

The perfuming composition of the invention is in the form of a transparent water-in-oil or oil-in-water emulsion susceptible of being sprayed, comprising an aqueous phase and an oily phase containing at least 3% by weight of perfuming ingredients relative to the total weight of the composition, wherein the difference between the density of the
30 oily phase and that of the aqueous phase is less than or equal to 0.005, preferably less than or equal to 0.003. This technical effect may be achieved when the oily phase contains a volatile fluorinated oil having a density higher than 1.

What is intended here by perfuming composition is a perfume vehicle, the main function of which is to impart, enhance or modify the odoriferous properties of a product.

5 In the case of an oil-in-water emulsion, the continuous phase is formed by water (aqueous phase) and the dispersed phase is formed by the oil (oily phase) which is essentially formed of perfuming ingredients. Conversely, the emulsion is a water-in-oil or inverse emulsion when the continuous phase is formed by the oil wherein the water is dispersed. The latter type of emulsion is preferred according to one embodiment of the invention.

10 As mentioned above, the emulsion according to the present invention meets a certain number of criteria required in the field of perfumery, for applications such as perfumes, eaux de toilette, or Colognes.

First of all, the composition of the invention is alcohol free. There is at present a demand for such types of compositions, particularly from consumers with sensitive skins
15 or whose skins are often exposed to the sun.

Moreover, the composition of the invention is fluid, or in other words
~~susceptible of being sprayed. In particular, its viscosity is lower than 10 Pa.s,~~
independently of the nature of the emulsion.

Furthermore, the emulsion is transparent, a desirable quality in the field of
20 perfumery. The transparency is achieved thanks to the addition to the perfuming compositions of ingredients capable of modifying the refractive indices of the two phases, so as to form a transparent emulsion. The particular solid or liquid ingredients used to act either on the oily or on the aqueous phase in order to achieve transparency are described in WO 00/33804, the contents of which are hereby included by reference, namely as regards
25 the citation of such ingredients.

The refractive index of a finished perfuming composition according to the invention has a value between ca. 1.40 and 1.44.

Now, besides all the mentioned criteria already met, the present invention brings an advantageous improvement to the known transparent emulsions. In fact, it has
30 been discovered that the addition of a certain ingredient to the oily phase of the emulsion could significantly improve the physical stability of the emulsion, in particular with regard to the creaming and sedimentation problems. In particular, the addition of such an ingredient to the oily phase of the emulsion makes it possible to narrow the difference

between the respective densities of the two phases, so as to bring it within the limit defined above, namely lower or equal to 0.005, or even 0.003 in preferred embodiments.

The invention brings thus a novel solution to the known problem of physical stability, by providing means for acting on the relative densities of both phases.

5 We have observed that in the context of this invention it is possible to use a certain number of substances or agents having the capacity of acting on the oily phase as desired and the choice of which depends on individual criteria that can be easily established by the skilled person for each composition. The above-mentioned agent which will be used to act on the oily phase must be soluble in the latter.

10 Preferably the agent is chosen with a density higher than 1.

It has been discovered that the desired here-above described technical effect could be advantageously achieved in particular by adding to the oily phase a volatile fluorinated oil having a density higher than 1. The technical effect obtained with this compound is particularly surprising considering that, amongst the prior art, EP 1064989
15 teaches the need to combine said ingredient with a particular surfactant in order to stabilise it in an emulsion.

~~Preferably, the fluorinated oil used according to the present invention is~~
selected from the group consisting of hydrofluoroethers such as methoxynonafluorobutane or ethoxynonafluorobutane. In a particular embodiment the ingredient added to the oily
20 phase of the emulsion is methoxynonafluorobutane. The volatile fluorinated oil may also be used in mixture with a less volatile fluorinated oil such as a perfluoroalkane. Perfluorodecaline is an example of a suitable perfluoroalkane for this purpose.

The amount of fluorinated oil added to the oily phase is comprised between 5 and 50% by weight relative to the oily phase.

25 The emulsions of the invention can contain from 5 to 50% by weight, preferably from 10 to 35% by weight, of dispersed phase and from 50 to 95% by weight, preferably 65 to 90% by weight, of continuous phase. These values are relative to the total weight of the emulsion and are independent of the fact that the compositions of the invention are in the form of a water-in-oil or an oil-in-water emulsion.

30 The oily phase is essentially formed of perfuming ingredients. Typically it comprises from 15 to 60%, preferably from 20 to 50% by weight of perfuming ingredients.

The aqueous phase comprises from 20 to 65% of water.

Optionally, the composition of the invention may further contain at least one surfactant. This surfactant will be used in a proportion of 0 to 8%, preferably 0.1 to 5% by

weight, relative to the total weight of the emulsion. The best results were obtained using 2 to 5% by weight of surfactant.

Different types of surfactants can be used in the context of the invention. One can mention non-ionic, cationic, anionic, the amphoteric surfactants and the phospholipids, which may all be used in the present invention. Preferably, there is used a non-ionic surfactant or a mixture of two non-ionic surfactants. As non restrictive examples, the ethoxylated nonylphenol comprising 9 to 10 units of ethyleneglycol (on sale under the name of Triton[®] N-101 ; origin : Fluka, Switzerland) or the ethoxylated undecanol comprising 8 units of ethyleneglycol (on sale under the name of Imbentin[®] 0800 ; origin : Kolb AG, Switzerland) can be cited. Other examples include the surfactants known under the tradename Tween[®] (origin : ICI, England), such as Tween[®] 20 [polyoxyethylene (20) sorbitan monolaurate], Tween[®] 40 [polyoxyethylene (20) sorbitan monopalmitate], Tween[®] 60 [polyoxyethylene (20) sorbitan monostearate] and Tween[®] 80 [polyoxyethylene (20) sorbitan monooleate], and the surfactants commercialised under the name of Span[®] (origin : ICI, England), such as Span[®] 20 (sorbitan monolaurate), Span[®] 40 (sorbitan monopalmitate), Span[®] 60 (sorbitan monostearate), and Span[®] 80 (sorbitan monooleate). One can further mention Cremophor[®] RH40 and RH60 (origin : BASF AG, Germany, which are ethoxylated hydrogenated ricin oils), Genapol[®] [origin : Hoechst AG, Germany, a sodium (alcohol polyglycol ether) laurylsulfate], the surfactant known under the name of Poloxamer[®] 407 (a diblock copolymer of ethyleneoxyde and propyleneoxyde, also commercialised under the names of Pluronic[®] F 127 and Pluracare[®] F 127, origin : BASF AG, Germany) ; Tetronic[®] (origin : BASF AG, Germany) ; DC 3225 C, DC 5200, DC 193 (origin : Dow Corning, USA) ; Abil[®] Em 97 (origin : Goldschmidt).

The perfuming ingredients that can be used in the present invention are all the ingredients commonly used in perfumery. These ingredients shall not be described in greater detail here, as their description cannot be exhaustive and the skilled person is able to choose them using his general knowledge and as a function of the desired olfactory effect. These perfuming ingredients belong to a variety of chemical classes, as varied as alcohols, aldehydes, ketones, esters, ethers, acetates, nitriles, terpenic hydrocarbons, heterocyclic nitrogen- or sulfur- containing compounds, as well as essential oils of natural and synthetic origin. Many of these ingredients are furthermore described in reference textbooks such as the book of S. Arctander, Perfume and Flavour Chemical, 1969, Montclair, New Jersey, USA, or its more recent versions, or other books of similar nature. The nature of the perfuming ingredients is not an essential parameter of the invention, and

the choice of the latter shall be solely dictated by hedonic requirements, i.e. as a function of the fragrance or odorant effect that it is desired.

The emulsion of the invention can be easily prepared by conventional mixing and homogenising methods, which therefore do not require a more detailed description
5 here.

According to the present invention, emulsions are created with an average drop size above 200 nm, preferably below 1 μm .

The invention will now be illustrated by the following non-restrictive examples, in which the temperatures are indicated in degrees Celsius, the proportions of
10 the ingredients are given in % by weight and the abbreviations have the usual meaning in the art.

Embodiments of the Invention

15

Example 1

Preparation of an alcohol-free perfuming composition in the form of a water-in-oil emulsion

20

A water-in-oil emulsion containing a perfuming base has been prepared with the below-specified ingredients. Incorporation of the fluorinated oil was done after emulsification of the other ingredients by a current method in the art.

25	<u>Ingredients</u>	<u>Parts by weight</u>
	Perfuming base *	10.00
	Silicon DC [®] 345 ¹⁾	43.00
	Methoxynonafluorobutane ²⁾	15.00
	Water	16.45
30	1,2-Butanediol	11.55
	Abil [®] Em 97 ³⁾	<u>4.00</u>
	Total	100.00

- 1) origin : Dow Corning
- 2) origin : 3M
- 3) origin : Goldschmidt

5

* The perfuming base was obtained by mixing the following ingredients :

	<u>Ingredients</u>	<u>Parts by weight</u>
	Citronellyl acetate	3
10	Geranyl acetate	9
	Linalyl acetate	276
	10% * Aldehyde C10	3
	10% * Aldehyde C12	12
	Methyl anthranilate	16
15	Bergamot essential oil	226
	Cetalox ^{® 1)}	5
	Lemon essential oil	318
	Dihydromyrcenol ²⁾	60
	Dipropyleneglycol	20
20	10% * Elemi ³⁾	20
	Fleuria 41063 B ⁴⁾	3
	Ethyl linalol	66
	10% * 3-(4-Methoxyphenyl)-2-methylpropanal ⁴⁾	30
	Geraniol	6
25	50% * Habanolide ^{® 5)}	130
	Hedione ^{® 6)}	215
	Hedione ^{® HC 7)}	72
	10% ** Indol	12
	Iso E Super ⁸⁾	85
30	Lavandin grosso essential oil	26
	1% * Liffarome ^{® 9)}	20
	Linalol	40
	Sfuma madarin essential oil	5

10

	10% * Crinkled mint essential oil	30
	Bigarade Neroli essential oil	130
	Portugal Florida orange essential oil	80
	Phenethylol	9
5	Petitgrain essential oil	63
	Pipol	5
	Rosemary essential oil	16
	Terpineol	9
	Violet essential oil	50
10	1% * Zestover ¹⁰⁾	<u>30</u>
	Total	2100

* in dipropyleneglycol (DIPG)

** in triethanolamine

- 15 1) 8,12-epoxy-13,14,15,16-tetranorlabdane
- 2) origin : International Flavours and Fragrances, USA
- 3) 3-allyl-1,2,3-trimethoxybenzene ; origin : Calchauvet, Grasse, France
- 4) origin : Firmenich SA, Geneva, Switzerland
- 5) pentadecenolide ; origin : Firmenich SA, Geneva, Switzerland
- 20 6) Methyl dihydrojasmonate ; origin : Firmenich SA, Geneva, Switzerland
- 7) Methyl dihydrojasmonate with high content of isomer *cis* ; origin : Firmenich SA, Geneva, Switzerland
- 8) 1-(octahydro-2,3,8,8-tetramethyl-2-naphtalenyl)-1-ethynone ;
origin : International Flavours and Fragrances, USA
- 25 9) 3-hexenyl methyl carbonate ; origin : International Flavours and Fragrances, USA
- 10) 9-decen-1-ol ; origin : International Flavours and Fragrances, USA

The density of each of the two phases of the composition was measured at 30° on a density meter (DMA 4500 ; Anton Paar). The density of the aqueous phase was 1.0209 and that of
30 the oily phase was 1.0249, thus forming a stable transparent emulsion.

Moreover, the respective refractive index of each phase was also measured and the difference between the two phases was of 0.0058.

Example 2Preparation of an alcohol-free perfuming composition in the form of a water-in-oil emulsion

5

A water-in-oil emulsion containing a perfuming base has been prepared with the below-specified ingredients. Incorporation of the fluorinated oil was done after emulsification of the other ingredients by a current method in the art.

10	<u>Ingredients</u>	<u>Parts by weight</u>
	Perfuming base *	10.00
	Silicon DC [®] 345 ¹⁾	45.00
	Methoxynonafluorobutane ²⁾	13.00
	Water	15.15
15	1,2-Butanediol	12.85
	Abil [®] Em 97 ³⁾	<u>4.00</u>
	Total	100.00

1) origin : Dow Corning

20 2) origin : 3M

3) origin : Goldschmidt

* The perfuming base was obtained by mixing the following ingredients :

25

	<u>Ingredients</u>	<u>Parts by weight</u>
	Benzyl acetate	250
	Pipol acetate	70
	Styrallyl acetate	230
30	Phenylacetic aldehyde	10
	Ambrettolide ^{® 1)}	10
	Astrotone	300
	Bergamot essential oil	1160

	β -Ionone	550
	Cassis essential oil	150
	50% * Cetalex ^{® 2)}	60
	Lemon essential oil	850
5	Citronellol	210
	Damascenone	20
	4-Decanolide	20
	Dihydromyrcenol ³⁾	440
	Dipropyleneglycol	20
10	Ethyl linalol	720
	7-Methyl-2H,4H-1,5-benzodioxepin-3-one ⁴⁾	100
	Floralozone ^{® 5)}	50
	3-(4-Methoxyphenyl)-2-methylpropanal ⁴⁾	170
	Fructose ^{® 6)}	100
15	Galbex ^{® 4)}	50
	γ -Damascone	5
<hr/>		
	Geranium essential oil	30
	Grapefruit essential oil	100
	Habanolide ^{® 7)}	1120
20	Hedione ^{® 8)}	2890
	Hedione [®] HC ⁹⁾	950
	Heliopropanal ¹⁰⁾	400
	Indol	35
	Iso E Super ¹¹⁾	380
25	Lavender grosso essential oil	40
	Liffarome ^{® 12)}	1
	Lilial ^{® 13)}	1050
	Lylal ^{® 14)}	430
	Sfuma mandarin essential oil	270
30	Melonal ¹⁵⁾	3
	Crinkled mint essential oil	20
	Peony 434017 ⁴⁾	60
	Peony white HS 100001 ⁴⁾	200
	Phenethylol	80

	Phenylhexanol	50
	Pipol	20
	Orange essential oil	500
	Rosalva ¹⁶⁾	4
5	Benzyl salicylate	400
	Pipol salicylate	400
	10% ** BHT ¹⁷⁾	200
	Zestover 18)	<u>22</u>
	Total	15200
10		
	* in 2-(2-ethoxyethoxy)-1-ethanol	
	** in propyleneglycol	
	1) origin : Givaudan-Roure SA, Vernier, Switzerland	
	2) 8,12-epoxy-13,14,15,16-tetranorlabdane ; origin : Firmenich SA, Geneva,	
15	Switzerland	
	3) origin : International Flavours and Fragrances, USA	
	4) origin : Firmenich SA, Geneva, Switzerland	
	5) 3-(4-ethylphenyl)-2,2-dimethylpropanal + 3-(2-ethylphenyl)2,2-dimethylpropanal ;	
	origin : International Flavours and Fragrances, Switzerland	
20	6) 2-methyl-1,3-dioxalane-2-ethylacetate ; origin : International Flavours and	
	Fragrances, USA	
	7) pentadecenolide ; origin : Firmenich SA, Geneva, Switzerland	
	8) methyl dihydrojasmonate ; origin : Firmenich SA, Geneva, Switzerland	
	9) methyl dihydrojasmonate with high content of isomer <i>cis</i> ; origin : Firmenich SA,	
25	Geneva, Switzerland	
	10) 3-(1,3-benzodioxol-5-yl)-2-methylpropanal ; origin : Firmenich SA, Geneva,	
	Switzerland	
	11) 1-(octahydro-2,3,8,8-tetramethyl-2-naphtalenyl)-1-ethanone ; origin : International	
	Flavours and Fragrances, USA	
30	12) 3-hexenyl-methyl carbonate ; origin : International Flavours and Fragrances, USA	
	13) 3-(4-tert-butylphenyl)-2-methylpropanal ; origin : Givaudan-Roure SA, Vernier,	
	Switzerland	

- 14) 4-(4-hydroxy-4-methylpentyl)-3-cyclohexen-1-carbaldehyde + 3-(4-hydroxy-4-methylpentyl)-3-cyclohexene-1-carbaldehyde ; origin : International Flavours and Fragrances, USA
 - 15) 2,6-dimethyl-5-heptanal ; origin : Givaudan-Roure SA, Vernier, Switzerland
 - 5 16) 9-decen-1-ol ; origin : International Flavours and Fragrances, USA
 - 17) 2,6-di-tert-butyl-4-hydroxytoluene
 - 18) 2,4-dimethyl-3-cyclohexene-1-carbaldehyde ; origin : Firmenich SA, Geneva, Switzerland
- 10 The density of each of the two phases of the composition was measured at 30° on a density meter (DMA 4500 ; Anton Paar). The density of the aqueous phase was 1.0193 and that of the oily phase was 1.0218, thus forming a stable transparent emulsion.
- Moreover, the respective refractive index of each phase was also measured and the
- 15 difference between the two phases was of 0.0086.
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Claims

1. Alcohol free perfuming composition in the form of a transparent water-in-oil or oil-in-water emulsion susceptible of being sprayed, comprising an aqueous phase and an oily phase containing at least 3% by weight of perfuming ingredients relative to the total weight of the composition, wherein the difference between the density of the aqueous phase and that of the oily phase is less than or equal to 0.005.

2. Perfuming composition according to claim 1, wherein the difference between the density of the oily phase and that of the aqueous phase is less than or equal to 0.003.

3. Perfuming composition according to claim 1, characterised in that the viscosity of the emulsion is below 10 Pa.s.

4. Perfuming composition according to claim 1, in the form of a water-in-oil emulsion.

5. Perfuming composition according to claim 4, comprising from 50 to 95% by weight of oily phase and from 5 to 50% by weight of aqueous phase.

6. Perfuming composition according to claim 1, characterised in that the oily phase of the emulsion comprises a volatile fluorinated oil having a density higher than 1.

7. Perfuming composition according to claim 6, characterised in that the volatile fluorinated oil is selected from the group consisting of hydrofluoroethers.

8. Perfuming composition according to claim 7, characterised in that the volatile fluorinated oil is methoxynonafluorobutane.

9. Process for the preparation of a perfuming composition according to any one of claims 1 to 8, characterised in that a volatile fluorinated oil having a density higher

than 1 is added to the oily phase of the emulsion after an emulsification with the aqueous phase of the emulsion.

10. Use of a volatile fluorinated oil having a density higher than 1 as a
5 stabilisation agent of a water-in-oil or oil-in-water emulsion.

11. Perfuming composition according to any one of claims 1 to 8, in the form of a perfume, an eau de toilette or a Cologne.

Abstract

5 A particularly stable perfuming composition in the form of a transparent fluid water-in-oil or oil-in-water emulsion is obtained by addition of a substance to the oily phase, capable of bringing closer the densities of the respective dispersed and continuous phases.
